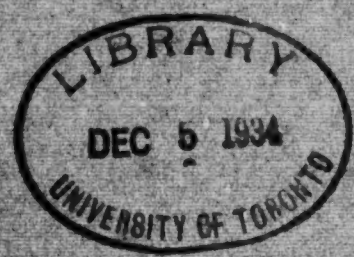


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Study of a City's Sinking Fund (1916)



BY

^{Lewis}
T. BRADSHAW, Finance Commissioner
TORONTO

*Paper submitted to the 16th Annual Convention of
The Union of Canadian Municipalities,
Montreal, August 21, 1916.*

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**T. BRADSHAW, Finance Commissioner
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STUDY OF A CITY'S SINKING FUND

Prior to the declaration of war in August, 1914, practically all of our municipal securities were absorbed in Great Britain or at home. Since that epoch-making event, and as a result of it, a new and most important market has been developed. The United States, which had previously been "nibbling" at some of our offerings, has become deeply interested, and has made substantial purchases. We might almost say that New York, for the time being, has assumed the relationship which London occupied.

When normal conditions once more prevail, London will, no doubt, be open again to us, and if so, instead of having, as formerly, only two sources to supply our capital needs, we shall be in the favored position of having three.

The increasing interest exhibited by our neighbours is illustrated by considering the value of the municipal debentures purchased by them in each of the last five years: in 1911, out of total offerings of some \$47,000,000, they took \$2,334,467, or 4.95% of the whole; in 1912, \$3,876,406, or 19.12%; in 1913, \$22,135,762, or 30.29%; and in 1914, \$25,559,548, or 48.80% of the whole.

The following statement, compiled from Mr. E. R. Wood's reports, sets forth the proportion of securities absorbed in the three markets:—

RECORD OF CANADIAN MUNICIPAL SECURITIES MARKETING IN THE YEARS 1911-1915

Year	Sold in Canada		Sold in United States		Sold in England	Total Sales
	Amount	Per cent.	Amount	Per cent.	Amount	
1911	\$16,326,378	34.62	\$ 2,334,467	4.95	\$28,498,000	\$47,158,845
1912	13,761,482	28.42	3,876,406	8.	30,777,000	48,414,894
1913	25,850,653	22.33	22,135,762	19.12	67,775,516	115,762,131
1914	25,105,320	29.82	25,559,548	30.29	33,723,563	84,388,431
1915	34,052,677	51.20	32,455,396	48.80	None	66,508,073

Canadian investors, who are best acquainted with the constitution and government of their municipal institutions, evidence their faith in them by increasing from year to year the amount of their investments. Last year such investment was over 34 millions of dollars, exceeded one-half of the whole, and was greater than the amount absorbed by Great Britain in the years 1911, 1912 or 1914.

Our friends across the border have the reputation of thoroughly investigating a proposition before making a commitment. Their cautious and gradual investment in Canadian securities illustrates this. During the past four or five years they have been watching and studying our growth. They have been examining into our civic administrations. The history and records of our municipal debts, as well as the manner in which we have met our obligations, are known to them. Frequent visits to our cities and journeying through our Provinces have been made by experienced bond men. Numerous inquiries about and investigations of our municipal laws, have been instituted. It is not too much to say, that the United States investor has been favorably impressed with the vast resources of our country, its growing industries, the stability of our institutions, and the general excellency of our government, and it is believed that, as this knowledge grows, the market for our securities will continue to widen.

Up to the present, the American market has chiefly bought the bonds of our more important communities. In trying us out they have, naturally, selected our choicest offerings, and it is believed that their experience has been satisfactory and that, in practically every instance, no disappointments have followed. Shortly it may be expected that consideration will be given to county securities and those of smaller established cities.

In this connection it is most desirable that we should be impressed with the value of this new market, and cultivate it assiduously. We should study its requirements in such a way as to encourage it to take still further interest in our problems and produce. The method in which securities are issued should conform to its requirements, for example: interest on bonds should be made payable half-yearly and by coupon; bonds should be in round amounts; principal and interest should be payable in some important American city, as well as in Canada; the repayment of principal in large issues and for long terms, should be according to the instalment principle. The time of marketing and the frequency of our appeals should receive consideration. It is poor policy to force bonds upon a dull and disinterested market, and to make frequent calls for capital. Promptness in meeting our obligations, interest and principal, is vital. Our past record,

in this connection, with few exceptions, is all that could be desired.

But above all, the American investor must be satisfied with the financial administration of our affairs. He will be particularly interested in the management of our sinking funds. Perhaps no feature of civic finance in the United States has had occasion to receive more attention and criticism than the conduct of sinking funds. Unfortunately, many instances can be quoted across the border of inefficiency and mal-administration in this branch of municipal administration. Too often the fund has been left in the hands of incompetents, resulting in serious losses. In other instances, the true function of the fund has not been recognized and, in consequence, its monies have been utilized for purposes entirely foreign to those for which they were accumulated. When the debts which the fund was assumed to liquidate, fell due, large deficits were discovered and a process of refunding had to be resorted to.

This brings me to my main theme:

In the early part of this year I was asked by His Worship, Mayor Porter, and the board of control of the city of Ottawa, to make an investigation of the City's sinking fund. Although extremely busy at the time, the opportunity was welcomed, because I had been deeply interested for some years in the administration of civic sinking funds and believed that an investigation of the city of Ottawa's fund might be helpful, not only to that municipality, but to others; and for the reason that, Ottawa being the capital of the Dominion, and a thoroughly representative Canadian city, the findings would be of value to our American friends whose growing interest in our securities has been referred to. Mayor Porter was good enough to consent to the publication of my report, and when your Association asked me to contribute a paper on some phase of municipal finance, I thought I might venture to submit it.

I do not propose to read the report, but simply to refer to some features contained in it:—

Ottawa, at the time of the examination, had a bonded debt of \$14,417,577—of this amount, \$13,094,362 was represented by sinking fund bonds, and \$1,323,315 by annuity instalment bonds. The investigation dealt with the sinking fund which was being accumulated to

meet the \$13,094,362 of sinking fund debt. The debt had been incurred during the last thirty years; it represented two hundred and forty-two different loans which fall due from year to year during the next thirty-seven years.

The result of the investigation disclosed that the city should have in its sinking fund \$3,003,147. It was most gratifying to find that it not only had this amount but, in addition, a surplus of no less than \$317,369, or 10% more than the sum required.

The following comparisons of the results of the investigation, with the City's own record, indicate that its affairs had been conservatively exhibited: while the liabilities of the fund, according to the investigation, amounted to \$3,003,147, the City had computed them at \$3,164,355, or \$161,207 more than they actually were; the assets of the fund were found to be \$3,320,516, whereas the City had only taken credit for \$3,279,406, or \$41,110 less than they actually were; the surplus over all liabilities, according to the investigation, was \$317,368, the City having only taken credit for \$115,050, or \$202,318 less than actually existed.

It is advantageous for any enterprise or institution, which has been carrying on its operations under the same management for many years, to have someone from the outside come in and review its work. A strong tendency exists to continue to do things in the same way, because they have always been done in that way. The outside investigator is almost sure to discover reasons why a continuance of customs which might have been satisfactory years ago, is no longer desirable. It is not intended, however, to discuss here methods which, it is believed, might be improved upon, for they are fully dealt with in the report.

The average rate of interest earned by the fund was 3.74%. It, of course, should be the aim of those administering the fund, to so invest the monies that, consistent with absolute safety, the highest rate shall be earned. A difference of only one per cent. would bring the average rate up to 4¾%, and would mean that the fund would have annual additional earnings of \$30,000.

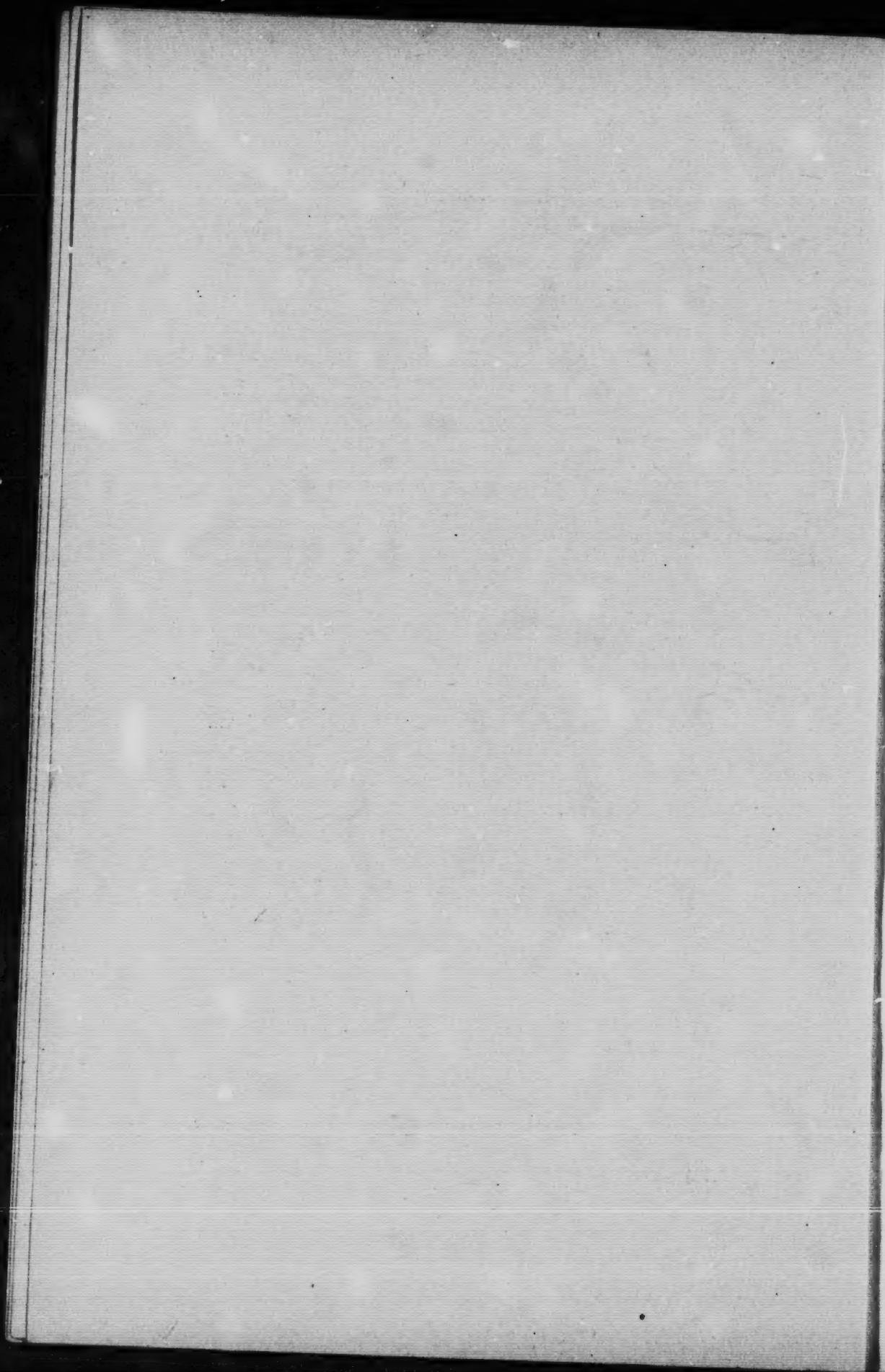
We hear much about the difficulty of operating such public works as electric light and waterworks systems, street railways, etc., so that they will produce a surplus revenue over expenditure and debt charges, but seldom, or never, is there presented to us the pos-

sibility of a sinking fund being so administered that it will produce a surplus and thus contribute materially to the City's revenue.

A word might be said as to the character of the investments in the Ottawa sinking fund: Of the \$3,300,000 in the fund, \$1,055,000 consisted of that city's own bonds; Dominion and Provincial Government securities accounted for \$300,000, and the balance of \$1,165,000 was made up of cash, etc. It will be noticed that 56% of the holdings comprised the bonds of the City itself, and in the report the question is raised as to the desirability of making further such investments.

The outstanding and important features, however, of the whole investigation are: that for all outstanding debenture debts, the City had on hand good interest-bearing investments or cash, of an amount substantially in excess of the full sinking fund requirements; and that the fund had been honestly administered.

It is believed that the facts disclosed in the report will tend to enhance the favorable opinion already entertained in the United States, of the administration of our important municipal bodies, and add to the good reputation of their credit and securities.



SPECIAL REPORT ON CITY OF OTTAWA'S SINKING FUND

TORONTO. Canada, March 15th, 1916.

Nelson D. Porter, Esq., Mayor,
Ottawa, Canada.

Dear Sir:—

In accordance with your request, I have made an investigation into the affairs of the Sinking Fund of the City of Ottawa and beg to report as follows:—

1. Character of Debenture Debt.

The City's debenture debt on the 31st December, 1915, amounted to \$14,417,577.53. This debt is represented by two classes of debentures, viz.:—

- (a) Those payable at the end of a fixed term of years, known as Sinking Fund Debentures, amounting to \$13,094,261.76, and
- (b) Those payable in annual instalments, known as annuity instalment debentures, amounting to \$1,323,315.77.

To meet those debentures payable at the end of a fixed term of years (Class A), it is essential to establish and build up a Sinking Fund. This is done by raising annually, by taxation, an amount known as the annual levy for Sinking Fund. This levy is exactly determined for each individual debenture debt. These annual levies, and their interest accumulations, if invested as they are received by the Sinking Fund, at not less than an assumed rate of interest, are sufficient to extinguish the debts at maturity.

Annuity instalment debentures (Class B) are gradually paid off each year. No Sinking Fund, therefore, is required, as the annual levy, when received, is immediately applied in payment of the debt and thus automatically the debt is reduced from year to year until ultimately extinguished.

Our investigation, therefore, deals entirely with the sinking fund which is being accumulated for the liquidation of the \$13,094,261.76 of debentures in Class A.

2. Sinking Fund for Benefit of Bond-holders and Tax-payers.

It is desirable to bear in mind that the sinking fund is for the mutual benefit of bond-holders and tax-payers. It assures those who have invested in the City's bonds that adequate provision is being made

for the prompt payment of the bonds at maturity, and is a guarantee to the citizens that the annual levies, which are made upon them for debt purposes, are being systematically and efficiently accumulated in order that the City's bonded debt will be liquidated as it falls due. It is, therefore, important, both to the bond-holders and to the citizens, that the fund should be adequately and efficiently administered.

You will be desirous of knowing the essential results of the investigation so I will, in the next few paragraphs, treat with (1) when the City's debt is payable, (2) the liabilities of the sinking fund, (3) the assets of the sinking fund, (4) the net result as disclosed by the balance sheet, and (5) the results of the present investigation compared with those as set forth in the City's record.

3. When Debt is Payable.

The debt of \$13,094,261.76 was contracted by the City throughout the past thirty years and is represented by 242 separate lots of debentures. These debentures mature from year to year, the last being due in 1953—37 years hence. In order that the City's yearly liability may be known, Statement No. 1, showing the amount of debt which has to be paid each year, has been prepared.

One of the functions of the sinking fund is, to have in hand, on the dates when these debts fall due, cash, or securities which can be converted into cash, of a sufficient amount as will meet such debts.

4. Liabilities of Sinking Fund.

I have made an investigation of each one of the 242 sinking funds maintained in respect to the same number of debenture debts, as at the 31st of December, 1915. The details of such investigation are set forth in the accompanying statement No. 2. The results, summarized, are as follows:—

Class of Debentures	Amount of Debenture Debt	Amount of Sinking Fund according to present investi- gation
1. General	\$4,106,940.33	\$ 857,677.31
2. Local Improvements	3,869,868.97	1,337,419.97
3. Waterworks	2,835,652.46	445,462.68
4. Public Schools	1,256,800.00	201,056.02
5. Electric Light	700,000.00	96,688.34
6. Collegiate Institute	25,000.00	64,843.07
	\$13,094,261.76	\$3,003,147.39

The investigation shows that the liabilities, that is, the aggregate of the individual sinking funds, amount to \$3,003,147.39.

5. Assets of Sinking Fund.

The resources, or assets, of the fund are given in detail in Statement No. 3, and may be summarized as follows:—

1. City of Ottawa Debentures.....	\$1,855,229.01
2. Province of Ontario Bonds.....	250,000.00
3. Dominion of Canada (part payment)	50,000.00
4. Accrued interest on foregoing to 31st December, 1915	41,180.24
5. Cash on deposit in Bank of Ottawa	1,124,106.89
Total	\$3,320,516.14

I have personally made an examination of each one of the securities enumerated in the statement above referred to and found them all in order. They are held for safe-keeping in the Head Office of the Bank of Ottawa. I also examined the Bank Pass-book, and found that the balance at the close of the year was as given above.

6. Balance Sheet and Surplus.

The net result of my investigation disclosed a surplus over liabilities of \$317,438.75, as set forth in the following statement:—

BALANCE SHEET OF CITY OF OTTAWA SINKING FUND.

Liabilities.	
Accumulated Sinking Fund for—	
General Debs	\$ 857,677.31
Local Improvements	1,337,419.97
Waterworks	445,462.63
Public Schools	201,056.02
Electric Light	96,688.34
Collegiate Institute	64,843.07
Surplus	\$3,003,147.39
	\$17,368.75
	\$3,320,516.14
Assets.	
City Ottawa Bonds	\$1,855,229.01
Province Ontario Bonds	250,000.00
Dominion Canada	50,000.00
Accrued Interest on foregoing to 31st Dec., 1915....	41,180.24
Cash in Bank	1,124,106.89
	\$3,320,516.14

7. Results of Present Investigation Compared with Those According to City's Records

The results disclosed by the investigation just concluded differ materially from those reported by the City, and as given in the City's records. The reasons for these differences will be dealt with in detail later on, but the extent of the variations may be now set down.

(1) Liabilities according to present investigation	\$3,003,147.39
Liabilities according to City's records	3,164,355.34
Liabilities over-stated by City	\$161,207.95
(2) Assets according to present investigation	\$3,320,516.14
Assets according to City's records	3,279,405.90
Assets under-stated by City	\$41,110.24
(3) Surplus according to present investigation	\$317,368.75
Surplus according to City's records	115,050.56
Surplus under-stated by City	\$202,318.19

Having briefly set forth the results of the investigation and the present financial position of the fund, I will now proceed to discuss other matters associated with my examination.

8. Annual Levy for Sinking Fund.

In an investigation of this character one of the first essentials is to determine whether the annual levies, which are being received by the sinking fund, are sufficient. If they are greater than is necessary, and the assumed rates of interest have been earned, then it would be expected that the fund would show a surplus; if less, then a deficit. Calculations were therefore made, for each debenture issue, to ascertain the exact annual levy. The annual levy depends upon (1) the amount of the particular debenture debt, (2) when the debt is payable, and (3) the rate of interest which it is assumed the annual levy, and its accumulations, will earn.

In Statement No. 4 will be found for each debenture issue (1) the annual levy which the City has been making, (2) the levy which it should have made, and (3) the extent of the annual excess or deficit.

It will be observed that in a number of cases the levies have been inaccurately determined. Practically all the important differences apply to debentures issued many years ago. From an examination of the early records, it would appear that, instead of the levy being exactly determined, it was estimated. In many recent issues of debentures the difference is due to a refinement in calculation and may be disregarded.

In order hereafter that a correct accounting of each sinking fund may be maintained, it is essential that the exact amount of the levy, applicable to each debenture issue, as given in the Statement referred to, shall annually pass to the credit of the sinking fund.

9. Prompt payment of levies, etc., by City to Sinking Fund essential.

The annual levies for sinking fund purposes are due, and should be paid by the City to the sinking fund, on the anniversary dates of the debentures. The actual amount of each levy has been determined upon this principle. If payment be later, the sinking fund suffers, as interest is assumed to be earned on the levies instantaneously and continuously from their due dates. In my examination, I found that all levies for the year are paid into the sinking fund on the 1st of July.

Again, I find that the interest on the City's bonds, held as investments by the sinking fund, is not paid into the fund when it falls due.

If justice and fairness are to be maintained as between the sinking fund and the other funds of the City, the defects referred to should be remedied.

10. Errors in Individual Sinking Funds.

In paragraph 7 it was stated that the total of the individual sinking funds, as reported by the City, exceeded what they should be by \$161,207.95.

In order that a comparison may be instituted of the amount at the credit of the sinking fund for each debenture issue according to the City's records, and according to this investigation, Statement No. 5 has

been prepared. In a number of cases the differences are material. For example:—

- (1) Under By-law No. 2692, which refers to an issue of \$270,000, the City's records show the sinking fund to be \$61,361.58; whereas it should be \$51,224.85—a difference of \$10,136.73.
- (2) Under By-law No. 1858, which refers to an issue of \$425,000, the City's records show the sinking fund to be \$206,045.12; whereas it should be \$195,934.30—a difference of \$10,110.82.
- (3) Under By-law No. 1773, which refers to an issue of \$75,000, the City's record shows the sinking fund to be \$47,733.82; whereas it should be \$37,594.06—a difference of \$10,139.76.

There are a few cases in which the City's sinking fund is less than it should be but in no instance does the defect amount to \$1,000.

In order that, hereafter, the City may maintain a correct accounting of each sinking fund, it is essential, in addition to having the correct annual levy pass to the credit of the sinking fund as heretofore indicated, that each sinking fund account in the City's records be adjusted so that the same will show the exact amount that should stand at its credit, as at 31st December, 1915.

11. Investments held by Sinking Fund.

All of the investments of the fund, as will be gathered from a perusal of Statement No. 3, are of unquestionable merit.

The bonds of the City were acquired at par, are carried in the City's records at that value, and have been entered in the balance sheet, now submitted, on the same basis. If they had been acquired in contemplation of re-sale, then they should be carried at their market value; but, as they were purchased for permanent investment—that is, to hold until they are paid off at maturity—and for the interest which they bear, it appears to be proper to take credit for them in the statement at their par value.

Dealing with the subject of purchasing securities for the sinking fund, I find that it has been the practice to acquire the City bonds at the arbitrary price of par, quite irrespective of their market value. This

is unsound and improper. All City bonds, in fact all securities, should be acquired at their market value at the time of purchase.

The City, when selling its bonds—whether to the sinking fund or to investment houses—should aim at obtaining the best possible price for them. On the other hand, the sinking fund when purchasing bonds—no matter whether they be City of Ottawa, or any other municipal or government bonds—should endeavor to acquire them on the most favorable terms obtainable.

This faulty method of making purchases appears to have been due to the failure to recognize the element of trusteeship which should characterize the management of every municipal sinking fund. The aim should be to make investments on the most favorable terms possible, consistent with the absolute security of the principal.

The bonds of the Province of Ontario, and of the Dominion of Canada, were acquired at current market prices. Care should be taken to have the book value of all securities bought at a discount, or at a premium, adjusted from year to year so that when such investments mature their book value will be exactly the same as their face or par value. In this way the sinking fund will receive the exact rate of interest which the investments were bought to yield.

Cash in bank needs no explanation, excepting that, in the interest of the fund, practically the whole of it should have been invested at a more remunerative rate of interest.

The item "accrued interest," \$41,180.24, is the amount of interest, on investments held by the fund, from the date when interest last fell due to the 31st December—the date of the investigation. The City failed to include this item among the sinking fund assets.

The question arises as to the desirability of making further investments in the City's own bonds. At present 56% of the total assets consist of this security. In view of this large proportion, I am inclined to believe that it would be preferable to seek other bonds. In this connection, I would like to quote from a recognized authority:—

"For a municipality to sell its bonds to the sinking fund is the same thing as for the municipality to borrow money from the sinking fund.

If the object of a sinking fund is to lay aside money year by year toward the payment of a debt at some future time, the money in the fund is most safely disposed for accumulation until that time, and the creditors are best secured, by dispersing it in the purchase of various strong securities which to the least possible extent are subject to the control of the debtor corporation."

12. Interest earned by Sinking Fund.

It should be the aim of those charged with the administration of the sinking fund to invest the moneys so that, consistent with absolute safety, the maximum rate of interest shall be earned. The average rate of interest which the present investments and cash yield is 3.74%, a rate which it is submitted is materially less than that which could have been earned if the fund had been efficiently and skilfully handled. It is quite true that this rate is higher than that which the fund is assumed to earn (on the average about 3.10%), but that is no excuse why every legitimate effort should not be exercised to make the earnings as large as possible, especially when it is realized that all excess earnings belong to the tax-payer. It has been the practice to have a large amount of cash on deposit in bank. The rate of interest received on this is 3½%. In view of the present investment conditions, it should not be difficult to invest this amount in unquestionable securities to yield from 5% to 5¼%, i.e., from 1½% to 1¾% more than is now being received. This step alone would increase the annual earnings of the fund by approximately \$17,000. As a reason for the sinking fund keeping this large amount on deposit I have been informed that the City receives a more favorable rate on its own overdraft. This, in my opinion, is an entirely improper view to take of the matter, and one which leads to inconsistencies. The City should not trade on the sinking fund, neither should the sinking fund trade on the City. The City should be able to finance its affairs quite independently of the sinking fund, and the sinking fund should be held strictly accountable for securing the best possible returns on the moneys paid into it.

13. Impossible to allocate Sinking Fund Investments.

An attempt has been made by the City to allocate specific investments to individual sinking funds, with

the result that confusion, irregularities and incencies have followed. Separate investments have been, and cannot be, found for the exact amount of the different sinking funds. Each year each sinking fund increases in amount and, to follow out what has been attempted, new investments would have to be secured each year for each increase. This cannot be done.

Again, in attempting to so set apart investments as it was found that the maturity date of such investments did not coincide with the maturity date of the debt for which the sinking fund was being accumulated.

Then again, it was found that some sinking funds had been invested in securities which were yielding 5%, while others were invested in securities yielding only 3½%, and so on.

All that is necessary is to have cash, or investments aggregating in the total the sum of all the individual sinking funds for the various debenture issues, care, of course, being taken to see that the amounts and maturity dates of the investments shall relate themselves to the debenture debts which they are intended to meet. It is known that the sinking fund, in due course will receive sufficient revenue to liquidate the whole of the City's indebtedness, so it is not important that the sinking fund should be concerned with making an investment, at present, for a debt of the City which is not due for 30 or 40 years; but it is most important that it shall make it to cover the City's debenture debts maturing in 1916, likewise in 1917, and other early years.

In making future investments for the sinking fund, the following statement No. 6 should be studied. It sets forth for each year the amount of debt which has to be met by the City, as well as the amount of investments held by the sinking fund and available for the payment of such debt.

There appears to have been considerable confusion of thought as to how individual sinking fund accounts should be treated. In some cases, the accounts shewed that the sinking fund was greater than the debt for which it was being accumulated, notwithstanding that the debt would not be due for some time yet. In other cases the accounts shewed that the fund was only approximately what it should be. The irregularities appear to have arisen from an attempt to associate

certain investments with certain sinking funds, the investments carrying one rate of interest, while the sinking fund was calculated at another. This is another illustration of the inconsistency of endeavoring to allocate specific investments to individual sinking funds.

When debentures are issued, a pro forma sinking fund statement should be immediately prepared setting forth the exact amount of the sinking fund on each anniversary date of the debt, as well as the exact amount at the end of the City's financial year, and should be in form somewhat similar to that shown in Statement No. 7.

14. Surplus in Sinking Fund.

The surplus of \$317,368.75 which was found to exist is due to the fund having earned for some years past a higher rate of interest than the rate which it was assumed it would earn, and to the payment into the fund of premiums received on sale of the City's bonds over par. At present the surplus constitutes a protection against any depreciation or loss which may arise. It is, of course, a proper question to ask, whether the fund is now, or is likely to be, in need of the whole of such protection.

There are four possible ways in which loss might arise in the fund:—

1. **Mal-administration.** If proper business safeguards are adopted, and skill and judgment exercised, loss under this heading may almost be disregarded.

2. **Investment Losses.** If the same character of securities be purchased—municipal, provincial and Dominion Government bonds—there is not much danger of loss to arise in this connection. But it must be recognized that in the investing and re-investing of important sums of moneys, notwithstanding the exercise of great care and good judgment, losses do sometimes arise.

3. **Depreciation in Interest Earnings.** So long as investments can be purchased to yield as high a rate of interest as the sinking funds are assumed to earn, there is no necessity to make special provision for this contingency. The rates of interest which the various sinking funds are assumed to earn vary from $2\frac{1}{2}\%$ to 4% ; the average is 3.10% . The present investments earn on the average 3.74% , and I think it can be fairly confidently assumed that investments can be obtained,

for some years to come, to yield a comfortable margin over the assumed average rate.

4. Failure of City to Pay Annual Levies to Sinking Fund.

This possible source of loss may be totally disregarded.

Notwithstanding what has been said, it is well recognized by conservative investors and corporations, such as life insurance, trust and loan companies, that it is desirable to build up an "investment reserve fund" as a protection against contingencies and losses which may arise, and in the case of your sinking fund—in order that it may be maintained on an absolutely safe basis—it is my opinion that it would be desirable to have such a reserve fund. I do not, however, believe that it is essential to maintain an unduly large one. The securities, which the fund may, by law, invest in, are among the safest; while the maximum rate of interest which the fund is assumed to earn is relatively low; therefore, there is no temptation to invest in anything but the best.

The amount at which the "investment reserve fund" shall be placed should be considered at the end of each year when all the facts relating to the operations of the sinking fund are being considered, including especially (a) a careful review of the character and value of the securities held as investments, and (b) the margin between the average rate of interest earned and that assumed to be earned.

Speaking broadly, and having regard to present conditions, it appears to me, if an "investment reserve fund" of, say 5% of your sinking fund liabilities were maintained, it would be sufficient. On this basis, the balance sheet would be as follows:—

Assets	\$3,320,516.14
Sinking Fund Liabilities.....	\$3,003,147.39
Investment Reserve Fund	
(5% of above).....	150,157.36
	3,153,304.75
Surplus	\$167,211.39

This last amount, or say \$160,000, it appears to me, might—subject, of course, to any legal restrictions or limitations—be utilized for such general purposes as the City might determine. This surplus is the result of years of accumulations—it is the product of practically

every bond issue made by the City—it is impossible to allocate it, or determine its exact source—and, therefore, it appears to me it should only be utilized for some definite, useful and important work—one which will benefit the whole community.

15. Sinking Fund Records and Administration.

The sinking fund should be kept separate and distinct from all other funds. Those charged with its administration should be required to present annually a statement of receipts and expenditures, of assets and liabilities; also details of all investments held and the amount of sinking fund for each issue of debentures. The essential books of record should be (1) Cash Book, (2) Journal, (3) Investment Ledger, (4) Sinking Fund Ledger, and (5) General Ledger. Its affairs should be conducted as though the fund were an absolutely independent organization.

Its administration demands more than ordinary oversight. Investment of important sums has to be made from time to time. Those charged with this should have an intimate knowledge of securities, their worth, and their suitability.

Efficiency in the conduct of its affairs would result in a considerable saving to the tax-payers; on the other hand, laxity of administration cannot but result in wastefulness and loss.

In the past, owing, it is believed, to lack of appreciation of the true functions of the fund, to the continuing of old customs which are now obsolete, and a failure to recognize the importance and significance of investing the funds to the best advantage, the tax-payers have seriously suffered.

From a careful consideration of what is involved, and from a knowledge of what can be accomplished under favorable circumstances, I suggest that the administration of the fund be placed in the hands of a small permanent commission of, say, three or four absolutely independent citizens—persons of irreproachable character, and who are known to have some knowledge of financial matters; such as, a judge, bank manager, trust company manager, etc., and some one representing the City Council, such as the Mayor, or a member of the Board of Control.

Conclusion.

In the conduct of municipal affairs, we hear much about the difficulty of managing such public works as

electric light, water works, street railways, etc., so as to produce a surplus of revenue over expenditure, but seldom or never is there presented to us the possibility that our sinking funds might be so administered that they would exhibit a surplus and thus contribute materially to the City's revenue. If the sinking fund of the City of Ottawa had been managed as it should have been, I am confident that the present investigation would have disclosed a much larger surplus than that shown. The average rate of interest earned on the funds should have been at least 1% greater. As the accumulated funds now amount to over \$3,000,000, an additional 1% would represent \$30,000 per annum.

In order to carry out some of the suggestions made, it may be necessary for the City to secure legislation, but, as it is believed that the proposals outlined would work out to the City's benefit, it is not likely that there would be any difficulty in obtaining what was necessary in this connection.

During the investigation I had an opportunity of becoming acquainted with the great amount of detail work which the Treasurer and his staff are supposed to cover. I am convinced, in order that the duties of the Department may be expeditiously and efficiently handled, that additional experienced assistance should be furnished. If the sinking fund records are to be maintained as they should be, it will, it appears to me, be necessary to obtain competent help under the direction of the Treasurer. The financial affairs of the City of Ottawa are quite important, and it is only the part of wisdom to have them administered in the most efficient and thorough manner possible.

The important fact disclosed by the investigation is that for all outstanding debenture debts the City has on hand good interest bearing investments, or cash, of an amount substantially in excess of the full sinking fund requirements.

Yours truly,

T. BRADSHAW.

The following tables are not complete. They are given merely as illustrations:—

STATEMENT NO. 1.

STATEMENT SHEWING THE AMOUNT OF DEBENTURE DEBT PAYABLE IN EACH YEAR, UNDER OUTSTAND.

1920.....	315,469.98	1938.....	180,000.00
1921.....	108,888.32	1939.....	388,903.46
1922.....	151,209.07	1940.....	295,000.00
1923.....	376,709.30	1941.....	773,500.00
1924.....	125,710.95	1942.....	538,500.00
1925.....	733,063.85	1943.....	596,500.00
1926.....	164,549.60	1944.....	570,000.00
1927.....	300,503.64	1945.....	1,100,480.00
1928.....	722,408.03	1946.....	105,500.00
1929.....	257,042.16	1949.....	98,000.00
1930.....	542,394.87	1951.....	85,000.00
1931.....	373,751.20	1952.....	12,000.00
1932.....	546,206.40	1953.....	51,000.00
1933.....	286,900.00		

Car'd Forward, \$6,042,255.67

Total.....\$13,094,261.76

STATEMENT NO. 2

VALUATION SHEWING AMOUNT OF ACCUMULATED SINKING FUND FOR EACH DEBENTURE ISSUE, ACCORDING TO PRESENT INVESTIGATION.

By-Law No.	Amount of Debt	Year Issued In	De-benture Pay-able in	Int. %	R. Rate	VALUATION		Total.
						Sinking Fund at Anni-versary	Int. to 31st Dec./15	
1. General Debentures.								
1344	\$145,000.00	1893	1933	4½	4	\$52,259.22	\$2,033.83	\$54,293.15
1453	150,000.00	1896	1926	4	4	74,007.26	2,895.41	76,902.67
1772	55,000.00	1897	1917	4	3	47,928.07	886.31	48,814.38
1774	44,250.00	1897	1937	4	3	13,741.00	254.12	13,995.12
1797	75,000.00	1898	1928	4	3	34,305.84	922.03	35,227.87
1856	425,000.00	1898	1928	3½	3	194,400.40	1,533.90	195,934.30
1913	39,931.00	1899	1939	3½	2½	11,431.43	215.47	11,646.90
2024	100,000.00	1900	1930	3½	2½	40,214.03	548.33	41,262.36
2023	80,000.00	1900	1930	3½	2½	32,675.75	405.00	33,080.75
2110	75,000.00	1901	1941	3½	3	10,995.42	169.02	17,164.44
2166	11,000.00	1902	1942	4	2½	2,470.92	38.42	2,509.34
2220	55,000.00	1902	1942	3½	2½	11,866.33	103.18	11,975.01
2249	15,000.00	1903	1923	4	3	4,474.61	111.80	4,586.41
2306	62,000.00	1903	1923	4	3	32,746.28	479.08	33,225.36
2323	10,000.00	1903	1923	4	3	2,983.02	14.47	2,997.49
2324	10,000.00	1903	1923	4	3	2,983.02	14.47	2,997.49
2325	10,000.00	1903	1923	4	3	2,983.02	14.47	2,997.49
2400	15,000.00	1904	1934	4	3	4,038.17	59.74	4,097.91

STATEMENT NO. 3.

ASSETS HELD BY SINKING FUND.

Particulars of Security.				Par and Book Value.	Accrued Interest to 31st Dec. '15
City of Ottawa Debs. 4% due 1916				\$51,133.11	\$1,193.57
" 4 " "				51,752.38	1,208.03
" 4 " "				893.57	17.92
" 4 " "				1,176.42	23.59
" 4 " 1917				26,633.70	534.13
" 4 " "				8,512.38	170.71
" 4 " "				18,068.71	362.36
" 4 " "				673.87	13.51
" 4 " "				935.01	18.75
" 4 " 1918				58,177.17	1,166.73
" 4 " "				48,513.18	972.92
" 3½ " 1919				46,869.97	1,496.63
" 3½ " "				40,979.60	1,308.54
" 3½ " "				9,098.90	290.54
" 4 " "				27,927.28	560.08
" 4 " "				25,404.37	511.28
" 3½ " 1920				8,413.24	268.65
" 3½ " "				55,125.07	1,760.23
" 3½ " "				58	1,877.83
" 4 " "				25	513.72
" 4 " "				45,000.00	902.47
" 4 " "				22,137.20	443.96
" 4 " "				159.58	6.37

STATEMENT NO. 4.

AMOUNT OF ANNUAL LEVY FOR SINKING FUND, FOR
EACH ISSUE OF DEBENTURES, ACCORDING TO
CITY'S RECORD AND ACCORDING TO PRESENT
INVESTIGATION.

By-Law No.	Amount of Deb.	ANNUAL AMOUNT		AMOUNT LEVIED BY CITY	
		Levied by City	That should be levied	Too Little	Too Much
1. General Debentures.					
1344.....	\$145,000.00	\$1,575.00	\$1,525.91	.....	\$49.09
1458.....	150,000.00	2,676.00	2,674.52	.....	1.48
1772.....	55,000.00	2,052.00	2,046.86	.....	5.14
1774.....	44,250.00	590.00	586.86	.....	3.14
1797.....	75,000.00	1,575.00	1,576.44	\$1.44	.....
1858.....	425,000.00	8,925.00	8,933.19	8.19	.....
1913.....	39,931.00	599.41	592.43	.....	6.98
2024.....	100,000.00	2,280.00	2,277.76	.....	2.24
2028.....	80,000.00	1,825.00	1,822.21	.....	2.79
2119.....	75,000.00	1,000.00	994.68	.....	5.32
2166.....	11,000.00	165.00	163.20	.....	1.80
2220.....	55,000.00	765.00	771.73	6.73	.....
2249.....	15,000.00	315.00	315.29	.29	.....
2300.....	62,000.00	2,320.00	2,307.37	.....	12.63
2333.....	10,000.00	210.00	210.19	.19	.....
2334.....	10,000.00	210.00	210.19	.19	.....
2335.....	10,000.00	210.00	210.19	.19	.....
2400.....	15,000.00	315.00	315.29	.29	.....
2401.....	25,000.00	525.00	525.48	.48	.....
2442.....	15,000.00	315.00	315.29	.29	.....
2493.....	26,000.00	975.00	967.61	.....	7.39
2495.....	86,000.00	1,806.00	1,807.66	1.66	.....

STATEMENT NO. 5.

STATEMENT SHEWING FOR EACH ISSUE OF DEBENTURES, (1) ACCUMULATED AMOUNT AT CREDIT OF SINKING FUND, ACCORDING TO CITY'S RECORD, (2) CORRECT AMOUNT THAT SHOULD BE AT CREDIT, ACCORDING TO PRESENT INVESTIGATION, AND (3) THE EXCESS OR DEFECT AS THE CASE MAY BE.

By-Law No.	Amount of Deb.	ACCUMULATED SINKING FUND		CITY'S ACCUMULATED SINKING FUND	
		According to City's Record	According to present investigation	Too Little	Too Much
1. General Debentures.					
1344	\$145,000.00	\$53,985.50	\$54,298.15	.....	\$ 1,687.00
1458	150,000.00	77,037.52	76,902.67	.....	134.85
1772	55,000.00	54,309.28	48,812.38	.....	5,496.90
1774	44,250.00	20,484.83	13,995.12	.....	6,489.71
1797	75,000.00	34,381.48	35,227.87	\$846.39	.....
1858	425,000.00	206,045.12	195,934.30	.....	10,110.82
1913	39,931.00	12,915.32	11,696.90	.....	1,218.42
2024	100,000.00	44,872.00	41,392.96	.....	3,479.13
2028	80,000.00	36,054.22	33,080.82	.....	2,973.40
2119	75,000.00	18,059.18	17,164.44	.....	894.74
2166	11,000.00	2,722.22	2,509.34	.....	212.88
2220	55,000.00	12,603.43	11,975.01	.....	628.42
2249	15,000.00	4,733.32	4,586.41	.....	146.91
2300	62,000.00	34,800.60	33,225.34	.....	1,575.26
2333	10,000.00	3,131.62	2,997.49	.....	134.13
2334	10,000.00	3,132.17	2,997.49	.....	134.68
2335	10,000.00	3,132.17	2,997.49	.....	134.68
2400	15,000.00	4,250.42	4,097.91	.....	152.51
2401	25,000.00	7,084.07	6,829.81	.....	254.26
2442	15,000.00	3,821.17	3,668.22	.....	152.95

STATEMENT NO. 6.

STATEMENT SHEWING, FOR EACH YEAR, DEBT PAYABLE BY THE CITY, AND THE INVESTMENTS HELD BY SINKING FUND THEREFOR.

Year	Amount of Debenture Debt Payable	Amount of Investment held in Sink- ing Fund	Amount by which debt is greater than Investment	Amount by which invest- ments are greater than Debt
1916.....	\$143,129.01	\$104,955.48	\$ 38,173.53	.....
1917.....	487,198.73	54,823.67	432,375.06	.....
1918.....	106,690.35	106,690.35	.....	.....
1919.....	300,370.12	150,370.12	150,000.00	.....
1920.....	315,469.98	465,235.53	.....	\$149,765.55
1921.....	108,888.32	108,888.32	.....	.....
1922.....	151,209.07	107,000.47	44,208.60	.....
1923.....	376,769.30	192,666.61	184,102.69	.....
1924.....	125,710.95	25,449.52	100,261.43	.....
1925.....	733,063.85	291,337.77	441,726.08	.....
1926.....	164,549.69	.....	164,549.69	.....
1927.....	300,503.64	.....	300,503.64	.....
1928.....	722,408.03	257,672.28	464,735.75	.....
1929.....	257,042.16	90,000.00	167,042.16	.....
1930.....	542,394.87	17,500.00	524,894.87	.....
1931.....	373,751.20	6,721.21	367,029.99	.....
1932.....	546,206.40	2,086.63	544,119.77	.....
1933.....	286,900.00	2,173.34	284,726.66	.....
1934.....	590,571.11	.....	590,571.11	.....
1935.....	925,801.52	.....	925,801.52	.....
1936.....	70,000.00	.....	70,000.00	.....

STATEMENT NO. 7.

SCHEDULE ILLUSTRATING HOW SINKING FUND STATEMENT SHOULD BE PREPARED.

Assume amount of Debenture Debt, \$100,000. Debentures issued 1st July, 1915.
Debenture Debt due, Sinking Fund Annual Sinking Fund
1st July, 1925. Interest Rate 3%. Instalment, \$8,723.05.

Year	Accumulated Sinking Fund on Anniversary Date, 1st July	Accrued Interest from 1st July to 31st December, 183 days.	Accumulated Sinking Fund as at 31st December
1916.....	\$ 8,723.05	\$ 131.20	\$ 8,854.25
1917.....	17,707.79	266.34	17,974.13
1918.....	26,962.07	405.54	27,367.61
1919.....	36,494.01	548.91	37,042.92
1920.....	46,311.89	696.58	47,008.47
1921.....	56,424.26	848.68	57,272.94
1922.....	66,840.02	1,005.35	67,845.37
1923.....	77,568.33	1,166.71	78,735.04
1924.....	88,618.42	1,332.92	89,951.34
1925.....	100,000.00	.....	.....

The above Statement sets forth the accumulated Sinking Fund on each anniversary date of the debenture debt, as well as that on the 31st December (the close of the City's financial year), in each year of the debt.